

**Notice of Allowability**

Application No.

10/528,939

Applicant(s)

COENE ET AL.

Examiner

Sam Rizk

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/3/2006.
2. ☒ The allowed claim(s) is/are 1-25 and 27.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

**DETAILED ACTION**

- Response to the applicant's amendment dated 3/3/2006
- Amended claims 1-25 and 27 have been submitted for examination
- Claim 26 has been Cancelled
- Amended claims 1-25 and 27 have been allowed

***Drawings Objections***

1. In view of the applicant amended drawings filed on 3/3/2006; all objections to the drawings are withdrawn.

***Claim Objections***

2. In view of the applicant amended claims 24 and 25 and cancelled claim 26, filed on 3/3/2006; all objections to the claims 24-26 are withdrawn.

***Claim Rejections - 35 USC § 112***

3. In view of the applicant amended claims 12-14, filed on 3/3/2006; all objections to the claims 12-14 under section **35 USC § 112** are withdrawn.

***Response to Arguments***

4. Applicant's arguments, see pages (18-23), filed on 3/3/2006, with respect to claims 1, 22 and 27 have been fully considered and are persuasive. The

rejections of claims 1,22 and 27 under section 35 **USC § 103(a)** has been withdrawn.

### **REASONS FOR ALLOWANCE**

The following is an examiner's statement of reasons for allowance:

5. In regard to claim 1, the prior art of record, in particular, Coene (US patent 6,580,766) and Fukumoto (US patent 5,191,571) do not teach, suggest, or otherwise render obvious:
  - calculating branch metrics for all possible state transitions in a Viterbi trellis of a one-dimensional row-based Viterbi detector, said transitions representing a number of subsequent bits in said bit row, said bits being the central-row bits of a cluster of the N-dimensional lattice of bits, said calculating being based on the difference of the received HF signal value with respect to a reference level, wherein said reference level depends on all bits of said cluster, said cluster comprising in addition to the central-row bits, a number of primary neighboring bits in each of a number of neighboring bit rows on each side along said N-1 other directions of said central bit row along which the one-dimensional Viterbi bit detection method is applied, and wherein preliminary bit decisions for the primary neighboring bits in the neighboring bit rows are used for determining the reference level to be used for calculating said branch metrics.

Per claim 1 of the instant application.

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6. Claims (2-21) depend from claim 1.
7. Claim 22 has similar language to claim 1.
8. Claim 23 depend from claim 22.
9. Claim 24, 25 and 27 comprise the same limitation as in claim 1:
  - Viterbi bit detection method for detecting the bit values of bits of the channel data stream stored on the record carrier along an N-dimensional channel tube, N being at least two, of at least two bit rows one-dimensionally evolving along a first direction and being aligned with each other along at least a second of N-1 other directions, said first direction together with said N-1 other directions constituting an N-dimensional lattice of bit positions.

### ***Conclusion***

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Rizk whose telephone number is (571) 272-8191. The examiner can normally be reached on M-F 8-5.

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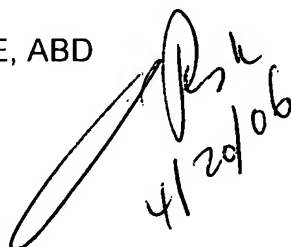
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronics Business Center (EBC) at 866-217-9197 (toll-free)

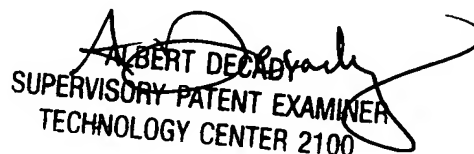
Sam Rizk, MSEE, ABD

Examiner

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Handwritten signature of Sam Rizk, dated 4/20/06.



Handwritten signature of Albert Decady, dated 4/20/06.

ALBERT DECADY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100